Marina S. Astanina

Laboratory on Convective Heat and Mass Transfer, Tomsk State University
36 Lenin Avenue, Tomsk, 634050, Russia
astanina.marina@bk.ru

EDUCATION

2018–2022	Ph.D.
	Specialization "A transient free convective heat transfer with temperature-dependent viscosity in areas with porous medium and heat sources" at Tomsk State University, Russia
2018	Master of Fluid Mechanics, Tomsk State University, Russia
2016	Bachelor of Fluid Mechanics, Tomsk State University, Russia

APPOINTMENTS

2018–Present	Research Assistant of the Laboratory on Convective Heat and Mass Transfer, Tomsk State University
2016–2017	Laboratory Assistant of the Laboratory on Convective Heat and Mass Transfer, Tomsk State University

AREAS OF INTEREST

Conjugate heat and mass transfer

Natural, mixed and forced convection

Heat and mass transfer in porous media

Fluid flow and heat transfer in nanofluids

Numerical analysis

Heat transfer and flow pattern in electronic systems

Computational fluid dynamics

AWARDS

- Russian Federation Government's Scholarship in priority areas of education, Russia, 2022
- Personal scholarship from Huawei for PhD-students, 2021
- Russian Federation Government's Scholarship in priority areas of education, Russia, 2021
- Russian Government Scholarship for Students, Russia, 2021
- Russian Federation President's Scholarship, Russia, 2021
- Literati awards «Highly commended» for the paper « Unsteady natural convection in a partially porous cavity having a heat-generating source using local thermal non-equilibrium model» published in International Journal of Numerical Methods for Heat and Fluid Flow, 2020
- Personal scholarship from Huawei for PhD-students, 2020
- Russian Government Scholarship for Students, Russia, 2020
- Russian Federation President's Scholarship, Russia, 2020
- Russian Federation President's Scholarship for study abroad, 2020
- Russian Federation Government's Scholarship in priority areas of education, Russia, 2020
- Russian Federation President's Scholarship, Russia, 2019
- Russian Federation Government's Scholarship in priority areas of education, Russia, 2019
- Tomsk Governor's Award for Young Researchers, Tomsk, Russia, 2018
- Tomsk Governor's Scholarship for Students, Tomsk, Russia, 2017
- Tomsk Mayor's Scholarship for Students, Tomsk, Russia, 2017
- Russian Government Scholarship for Students, 2017

REVIEWING SERVICES

- Journal of Thermal Science and Engineering Applications
- International Journal of Numeral Methods for Heat and Fluid Flow
- Materials Science & Engineering B
- Thermophysics and Aeromechanics

RESEARCH PROJECTS

- Government task of the Ministry of Education and Science of the Russian Federation, №13.1919.2014/K (implementer)
- Grants Council (under the President of the Russian Federation), Grant No. MD-6942.2015.8 (implementer)
- Project of Russian Scientific Fond (Project No. 17-79-2014) (implementer)
- Government task of the Ministry of Education and Science of the Russian Federation, Project Number 13.9724.2017/8.9 (implementer)
- Project of Russian Foundation for Basic Research (Project No. 17-58-45124\17) (implementer)
- Project of Russian Foundation for Basic Research (Project No. 19-48-703034) (implementer)
- Project of Russian Foundation for Basic Research (Project No. 20-31-90080) (implementer)

JOURNAL PAPERS

1. Astanina M.S., Sheremet M.A., Umavathi J.C., (2015), Unsteady natural convection with temperature-dependent viscosity in a square cavity filled with a porous medium // *Transport in Porous Media*. 110 (1): 113-126.

2. Astanina M.S., Sheremet M.A., (2016), A transient free convection study with temperature-dependent viscosity in a square cavity with a local heat source// *IOP Conf. – Ser.: Mater. Sci. Eng*. 124 (1): 012039.

3. Astanina, M.S., Sheremet, M.A., Oztop, H.F., Abu-Hamdeh, N., (2017), Natural convection in a differentially heated enclosure having two adherent porous blocks saturated with a nanofluid// *Eur. Phys. J. Plus.* 132: 509.

4. Astanina M.S., Sheremet M.A., (2017), Natural convection of water in a partially porous enclosure with a heat-generating element// *MATEC Web of Conferences*. 141: 01010.

5. Astanina M.S., Mohamed Kamel Riahi, Abu-Nada E., Sheremet M.A., (2018), Magnetohydrodynamic in partially heated square cavity with variable properties: Discrepancy in experimental and theoretical conductivity correlations// *International Journal of Heat and Mass Transfer.* 116: 532-548.

6. Astanina M.S., Sheremet M.A., Umavathi J.C., (2018), Effect of thermal radiation on natural convection in a square porous cavity filled with a fluid of temperature-dependent viscosity// *Thermal Science.* 22 (1): 391–399.

7. Astanina M.S., Sheremet M.A., Oztop H.F., Abu-Hamdeh N., (2018), MHD natural convection and entropy generation of ferrofluid in an open trapezoidal cavity partially filled with a porous medium// *International Journal of Mechanical Science.* 136: 493-502.

8. Astanina M.S., Sheremet M.A., Oztop H.F., Abu-Hamdeh N., (2018), Mixed convection of Al_2O_3-water nanofluid in a lid-driven cavity having two porous layers// *International Journal of Heat and Mass Transfer*. 118: 527-537.

9. Astanina M.S., Sheremet M.A., Umavathi J.C., (2018), Transient natural convection with temperature-dependent viscosity in a square partially porous cavity having a heat-generating source// *Numerical Heat Transfer; Part A: Applications.* 73 (12): 849–862.

10. Astanina M.S., Abu-Nada E., Sheremet M.A., (2018), Combined effects of thermophoresis, Brownian motion, and nanofluid variable properties on CuO-water nanofluid natural convection in a partially heated square cavity// *Journal of Heat Transfer*. 140 (8): 082401.

11. Astanina M.S., Sheremet M.A., Pop I., (2018), MHD natural convection in a square porous cavity filled with a water-based magnetic fluid in the presence of geothermal viscosity// *International Journal of Numerical Methods for Heat and Fluid Flow*.128(9): 2111–2131.

12. Astanina M.S., Sheremet M.A., (2019), Simulation of mixed convection of a variable viscosity fluid in a partially porous horizontal channel with a heat-generation source// Computer Research and Modeling. 11(1): 95–107.

13. Astanina M.S., Sheremet M., Umavathi C.J., (2019), Unsteady natural convection in a partially porous cavity having a heat-generating source using local thermal non-equilibrium model// *International Journal of Numerical Methods for Heat and Fluid Flow*. 29(6): 1902-1919.

14. Astanina M.S., Rashidi M.M., Sheremet M.A., Lorenzini G., (2019), Effect of porous insertion on convective energy transport in a chamber filled with a temperature-dependent viscosity liquid in the presence of a heat source term// *International Journal of Heat and Mass Transfer.* 144: 118530.

15. Astanina M.S., Sheremet M.A., Mahabaleshwar U.S., Singh J., (2020), Effect of porous medium and copper heat sink on cooling of heat-generating element// *Energies*. 13(10): 2538.

16. Astanina M.S., Rashidi M.M., Sheremet M.A., Lorenzini G., (2020), Cooling System with Porous Finned Heat Sink for Heat-Generating Element// *Transport in Porous Media*. 133(3): 459-478.

17. Astanina M.S., Buonomo B., Manca O., Sheremet M. A., (2021), Transient free convection of variable viscosity liquid in an inclined cube affected by the temperature

modulation on a vertical wall // *International Journal of Thermal Sciences*. 164: 106880.

18. Astanina M.S., Ghalambaz M., Chamkha A.J., Sheremet M.A., (2021), Thermal convection in a cubical region saturated with a temperature -dependent viscosity fluid under the non-uniform temperature profile at vertical wall // *International Communications in Heat and Mass Transfer*. 126: 105442.

19. Astanina M.S., Buonomo B., Manca O., Sheremet M. A., (2021), Effect of third size on natural convection of variable viscosity fluid in a closed parallelepiped // *International Communications in Heat and Mass Transfer*. 128: 105618.

CONFERENCE PROCEEDINGS

1. Astanina M.S. Numerical analysis of unsteady natural convection with a fluid of temperature-dependent viscosity in a closed cavity with local isothermal elements, In: Proceedings of the 54th International Scientific Student Conference, 16–20 April 2016, Novosibirsk, Russia. P. 152.

2. Astanina M.S. Simulation of natural convection fluid with a fluid of temperature-dependent viscosity in a closed porous cavity, In: The IVth International Youth Forum, 10–14 October 2016, Tomsk, Russia, P. 68–71.

3. Astanina M.S., Sheremet M.A. Analysis of the porosity effect on convective heat transfer in an enclosure, filled with a variable viscosity fluid, In: The VIth International Youth Scientific Conference «Currently issues of continuum mechanics and celestial mechanics–2016», 16–18 November, 2016. P. 103–104.

4. Astanina M.S. Convection in a heated closed porous cavity filled with a fluid with variable viscosity, In: Proceedings of the 55th International Scientific Student Conference, 17–20 April 2017, Novosibirsk, Russia. P. 140.

5. Astanina M.S. Analysis of convective heat transfer in a heated enclosure with/without porous insertion, In: The XIV International Conference of students, graduate students and young scientists «Prospects of fundamental sciences development», 25–28 April 2017, Tomsk, Russia, P. 14–17.

6. Astanina M.S., Sheremet M.A. Effect of fluid temperature-dependent viscosity on convective heat and mass transfer in a partially porous enclosure with a heat-generating element, In: The VII International Scientific Conference «Current issues of continuum mechanics and celestial mechanics–2017», 27–29 November 2017, Tomsk, Russia, P. 245–247.

7. Astanina M.S. Regimes of a mixed convection of a viscous fluid in a horizontal channel in the presence of a heat-generating source, In: The XV International scientific and practical conference of students, of graduate students and young scientists «Youth and modern information technology», 04–07 December 2017, Tomsk, Russia, P. 23–24.

8. Astanina M.S. Study of mixed convection regimes in a porous channel with a heat source, In: Proceedings of the 56th International Students Scientific Conference 22–27 April 2018, Novosibirsk, Russia, 2018, P. 33.

9. Astanina M.S. Thermogravitational convection in a porous square cavity having an energy source, In: The XV International Conference of students, graduate students and young scientists «Prospects of fundamental sciences development», 24–27 April 2018, Tomsk, Russia, P. 19–21.

10. Astanina M.S. Intensification of heat transfer in a closed cavity in the presence of the porous insert by a source perimeter, In: The XVI International scientific and practical conference of students, of graduate students and young scientists «Youth and modern information technology», 03–07 December 2018, Tomsk, Russia, P. 23–24

11. Astanina M.S. Study of thermogravitational convection in an enclosure with porous insertion by methods of computational heat transfer, In: The XVI International Conference of students, graduate students and young scientists «Prospects of fundamental sciences development», 23–26 April 2019, Tomsk, Russia, P. 65–67.

12. Astanina M.S., Sheremet M.A. Natural convection in a porous cavity filled with a fluid of variable viscosity in the presence of the heat-generating element and finned radiator, In: II International Conference on Numerical Modelling in Engineering (NME 2019) August 19-22, 2019, Beijing, China

13. Astanina M.S. Effect of the thermophysical properties of the working fluid on the structure of a convective flow in a cubical cavity with non-uniform heating, In: The XVII International Conference of students, graduate students and young scientists «Prospects of fundamental sciences development», 21–24 April 2020, Tomsk, Russia, P. 13–16.

14. Astanina M.S. Simulation of natural convection of a fluid with variable viscosity in a cubic cavity with un-uniform heating of the vertical boundary, In: Proceedings of the 58th International Students Scientific Conference 10–13 April 2020, Novosibirsk, Russia, 2020, P. 77

15. Astanina M.S., Sheremet M.A. Unsteady free convection of fluid with variable viscosity in a partially porous cube under an influence of energy source// In book: Recent Advances in Fluid Dynamics, Select Proceedings of ICAFFTS 2021, Select Proceedings of ICAFFTS-2021, September 24-25, 2021, SVNIT Surat, Gujarat, India. Series. DOI: 10.1007/978-981-19-3379-0_42

16. Astanina M.S., Sheremet M.A. Natural Convection of Nanofluid with Variable Thermophysical Properties Inside a Chamber in the Presence of a Source of Periodic Heat Generation// Abstract book of The 4th International Conference on Frontiers in Industrial and Applied Mathematics (FIAM-2021), 21-22.12.2021, 344 P., P. 224

17. Astanina M.S., Sheremet M.A. Effect of heat-generated element location on natural convection of nanofluid with temperature-dependent thermal properties in a cavity// book of

abstracts: International Symposium On Convective heat and mass transfer CONV-22, 5-10.06.2022, Izmir, Turkey, 2022, 87 P., P. 39.